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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,780	08/21/2001	Yong Guo	HMR2053 USNP1	6740

5487 7590 02/23/2005

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EXAMINER

DESAI, ANAND U

ART UNIT	PAPER NUMBER
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1653

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/933,780	GUO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Anand U Desai, Ph.D.	1653	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 18-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This office action is in response to Amendment filed on November 23, 2004.

New claim 22 has been added. Claims 11-17 have been previously withdrawn. Claims 1-10, and 18-22 are currently pending and are under examination.

#### **Withdrawal of Rejections**

2. The rejection of claims 6, and 10 under 35 U.S.C. §112, 2<sup>nd</sup> paragraph is withdrawn based on Applicant's amendment.

3. The rejection of claim 10 under 35 U.S.C. §112, 1<sup>st</sup> paragraph is withdrawn based on Applicant's amendment.

#### **Maintenance of Rejections**

##### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-9, and 18-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. In claims 1, and 18, what is the second component that makes up a fusion protein? Description of the compound of interest is not complete. Claims 2-9, and 19-22 are rejected for depending on rejected claims 1, and 18.

##### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakanishi et al. U.S. Patent 6,235,521 (Effective filing date=September 10, 1999). Nakanishi et al. disclose a phage head fusion protein that contains a nuclear localization signal. The nuclear localization signal was from the nuclear protein, SV40 large T antigen, and the phage head protein was gpD (see Example 1, and claim 3, current application, claims 1-3, and 10). The SV40-gpD fusion protein comprises the amino acid sequence Arg-His-Lys-His (current application, claim 7, 18). The SV40-gpD fusion protein is made by recombinant DNA technology. The SV40-gpD fusion protein comprises a sequence, Pro-Lys-Lys-Lys-Arg-Lys-Val-spacer- (see U.S. Patent '521, Column 7, Example 2, and Table 2, current application, claims 18-21). Thus the fusion protein comprises a sequence,  $-(X-X-X-X)_n-$ , where n is 1 and each X is selected from arginine, histidine, or lysine, wherein the fusion protein can have an amino acid linker attached between the nuclear localization signal and the compound of interest (see U.S. Patent '521, Column 7, lines 45-60, Table 2, current application, claims 1-3, 7-10, and 18-21).

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9. Claims 1-3, 7-10, and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Guarente et al. (Molecular and Cellular Biology, pp. 578-585, Vol. 7, No. 2, (1987)). Guarente et al. disclose a yeast fusion protein that comprises a nuclear localization signal, derived from a transcription factor. Guarente et al. disclose a *Saccharomyces cerevisia* HAP2 fusion protein. The HAP2 protein is a transcription factor because it is capable of activating the yeast CYC1 gene through activation of the upstream activator site, *UAS2* (see first paragraph of Discussion section, page 584). The *lexA*-HAP2 fusion protein comprises the amino acid sequence Arg-His-Lys-His. The *lexA*-HAP2 fusion protein is made by recombinant DNA technology (see Material and Methods, page 580, Construction of *lexA*-HAP2 fusion protein, current application, claim 21). Therefore the *lexA*-HAP2 fusion protein comprises a sequence  $-(X-X-X-X)_n-$ , where  $n$  is 1 and each  $X$  is selected from arginine, histidine, or lysine (see Figure 3, page 581, the line with nucleotide 810 labelled, current application, claims 1-3, 7-10, and 18-21).

**Response to Applicants Remarks**

Applicant states that the claims of the present application are directed to a fusion protein comprising a membrane-penetrating peptide attached to a compound of interest. Applicant states there is nothing to suggest that the SV-gpD fusion protein disclosed by Nakanishi et al. (U.S. Patent 6,235,521) is a membrane-penetrating peptide, therefore it cannot support a rejection under 35 U.S.C. § 102(e). Applicant cites paragraphs 0048 and 0046 of the present application specification to state that a protein containing a nuclear localization signal does not necessarily contain a membrane-penetrating peptide.

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Applicant also cites paragraph 0052, which describes a preferred embodiment, wherein the membrane penetrating peptide “may be derived from an NLS [nuclear localization signal], or overlapping with an NLS.” Applicant also states that the Guarente et al. reference does not disclose or suggest all the limitations of the claims, and therefore cannot support a rejection under 35 U.S.C. § 102(b).

This is found unpersuasive. It is unclear how a peptide disclosed with the amino acid sequence being claimed would not have the same function currently being claimed. Nakanishi et al. do disclose a phage head fusion protein. The SV40-gpD fusion protein comprises the amino acid sequence Arg-His-Lys-His. The SV40-gpD fusion protein is made by recombinant DNA technology. The SV40-gpD fusion protein comprises a sequence, Pro-Lys-Lys-Lys-Arg-Lys-Val-spacer-. Thus the fusion protein comprises a sequence,  $-(X-X-X-X)_n-$ , where  $n$  is 1 and each  $X$  is selected from arginine, histidine, or lysine, wherein the fusion protein can have an amino acid linker attached between the nuclear localization signal and the compound of interest. Guarente et al. do disclose a *Saccharomyces cerevisia* HAP2 fusion protein. The HAP2 protein is a transcription factor because it is capable of activating the yeast CYC1 gene through activation of the upstream activator site, *UAS2* (see first paragraph of Discussion section, page 584). The *lexA*-HAP2 fusion protein comprises the amino acid sequence Arg-His-Lys-His. The *lexA*-HAP2 fusion protein is made by recombinant DNA technology. Therefore the *lexA*-HAP2 fusion protein comprises a sequence  $-(X-X-X-X)_n-$ , where  $n$  is 1 and each  $X$  is selected from arginine, histidine, or lysine.

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10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

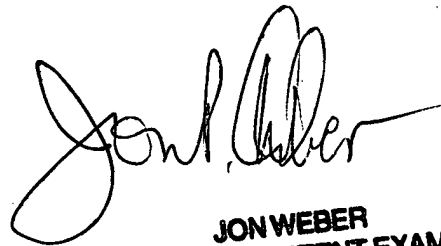
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand U Desai, Ph.D. whose telephone number is (571) 272-0947. The examiner can normally be reached on Monday - Friday 9:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon P. Weber can be reached on (517) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 16, 2005



**JON WEBER**  
**SUPERVISORY PATENT EXAMINER**